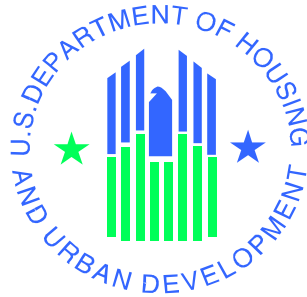**ISSUED TO:**

POWERTEK
3040 Williams Drive, Suite 403
Fairfax, VA 22031

ISSUED BY:
The Federal Systems Integration and Management Center (FEDSIM)
Metro Park
6354 Walker Lane
Alexandria, VA 22310

8(A) STARS TASK ORDER
(FUNCTIONAL AREA 1)

GST0006AJST12

IN SUPPORT OF:

1.   *Housing and Urban Development (HUD)*
Development and Coordination Group (DCG)

FEDSIM Project Number 24691HUM

SECTION C – DESCRIPTION / SPECIFICATIONS/ STATEMENT OF WORK

C.1 **BACKGROUND**

The United States Department of Housing and Urban Development (HUD) is the Executive Agency responsible for providing resources for empowering local governments, businesses, and organizations to build strong communities. Part of HUD's support mission is to provide Information Technology (IT) project management planning and acquisition support; IT technical services, including software development and maintenance; and testing/quality assurance support related to IT products and processes. HUD has adopted life cycle management policies and procedures to promote the effective acquisition, development and management of information systems.

Public and Indian Housing (PIH) a department within HUD, provides rental subsidies to help low-income families that need financial assistance. PIH allocates funding to locally chartered Public Housing Authorities (PHAs), which provide housing or rental subsidies to low-income families. PIH sponsored rental assistance programs support the housing needs of approximately 3.2 million low-income families nationwide. For more information on PIH programs and organization, see PIH's web page at www.hud.gov/offices/pih/index.cfm.

The Real Estate Assessment Center (REAC) is an organization within PIH that is responsible for capturing, standardizing, improving and evaluating data from the portfolio of properties for which HUD has a financial interest or statutory obligation to monitor. PIH-REAC has developed multiple systems to support this mission and has expanded its IT responsibilities to include other PIH Information Services/Systems Division (ISD) systems. In addition, there are systems that are part of the CIO Office that the DCG Contractor shall be required to support. The Development Coordination Group (DCG) supports these systems.

DCG, is a critical impetus in accomplishing HUD's Mission. There are a consortium of maintenance and development Contractors who are responsible for the suite of systems called the PIH Systems. These systems are listed in Section C.2 The DCG contractor will support the information technology planning, analysis, management support, systems development, system testing, system operation, system maintenance, and software technical support of PIH. DCG support is the backbone of PIH and ensures that all the system releases are done in accordance with the HUD System Development Methodology (SDM). The DCG Contractor shall report directly to and assist the Government in this role.

The DCG Contractor shall assist the Government in overall coordination of the individual systems maintenance contractor efforts for conformance to standards, interoperability, and schedule monitoring and coordination. Since one software change on one PIH System can have a domino effect throughout all the PIH Systems, the DCG Contractor is the interface between the PIH System contractors and the HUD Architecture Group to

ensure the proper communication occurs. In addition, the DCG contractor is responsible for keeping the Government abreast of PIH Systems schedule for releases and software changes.

The Chart below outlines the responsibilities of the Government, the individual system maintenance contractors, and the DCG Contractor and the accountability for Tasks C.5.1 through C.5.5 referenced in this TOR .

Function	PIH Systems Contractor Responsibility	Government Responsibility	DCG Contractor Responsibility
Technical Architecture	Identify and Document Technical Architecture Needs Provide input as needed	Approve Schedule Manage Project	Develop Integrated PIH Architechture Server Architechture Application Architechture Data Architecture Implement and Monitor Architechture Standards
Release Management	Prepare and Submit Release Deliverables Provide input as needed	Approve Schedule Manage Project	Perform Unscheduled Releases Perform Scheduled Releases Manage Integration Testing
Configuration Management	Adhere to Configuration Management Policies Provide input as needed	Approve Schedule Manage Project	Manage CCB Process Manage Subsystem Code Provide Quality Assurance for Configuration Management
Database Administration	Provide Database Requirements Specifications Provide Data Requirements Adhere to PIH Database Standards Provide input as needed	Approve Schedule Manage Project	Manage and Document Data Models Document Database Interfaces Manage Test Databases Perform Database Migration Perform 3rd Party Reviews Manage Database Consolidation
System Management	Provide input as needed	Approve Schedule Manage Project	PIH/Production Support Coordination Plan Server Migration Provide System Perfromance Metrics Manage Development and Test Environments Evaluate COTS Products and Upgrades
Process Engineering	Adhere to PIH SEPT Standards and Guidelines Provide input as needed	Approve Schedule Manage Project	Develop CMMI Implementation Plan Schedule Training Coordinate SEPT Activities
Security	Prepare and Document Certification and Accreditation Documents Provide input as needed	Approve Schedule Manage Project	Review Certification and Accreditation Documents Provide Guidance for C&A Activities Develop Systems Security Plan Implement and Monitor Plan

In addition, there are systems that are part of the CIO Office that this Contractor shall be required to support. These systems, covered in Task 5, are mutually exclusive to those covered in Tasks 1-4 of this TOR and are listed in C.5.5 of this TOR.

HUD requires reporting of its funding via the following PCAS codes referenced here, Section B, and Section C.5.1.5.1.1.

- C.5.1, Current Environment and Overarching Considerations (CLIN 0001) PCAS (A).

- C.5.2, Task 2, Operational Support (CLIN 0002a), PCAS (I)

- C.5.3.1, Task 3, Corrective Maintenance (CLIN 0002b), PCAS (J1)

- C.5.3.2, Task 3, Adaptive Maintenance (CLIN 0002c), PCAS (J2)

- C.5.4, Task 4, Development (CLIN 0003) PCAS (C)

- C.5.5, Task 5, CIO System Support (CLIN 0005) Multiple PCASs

C.2. PIH –IT SYSTEMS OVERVIEW

PIH Systems include the following:
- The Customer Assistance Subsystem (**CASS**) provides customer support personnel from the REAC Technical Assistance Center (TAC) with a means to track customer support requests.

- The Financial Assessment Subsystem - (**FASS-PHA**) tracks the financial condition of properties.

- The Financial Assessment Subsystem - (**FASS-FHA**) tracks the financial condition of Housing.

- The Management Assessment Subsystem (**MASS**) tracks the assessment of management operations indicators information for PHAs as mandated by PHAS Final Rule.

- The combined assessment scores (financial, physical, resident satisfaction, and management operations) are tracked by the iNtegrated Assessment Subsystem (**NASS**). Separate modules address the combined assessment of PHAs. Future modules will address MF properties and Tenant-Based Section 8 properties.

- The Physical Assessment Subsystem (**PASS**) tracks the physical condition of public housing and multi-family housing properties.

- The Quality Assurance Subsystem (**QASS**) ensures the quality of assessment ratings and monitoring of public housing projects.

- The Resident Assessment Subsystem (**RASS**) assesses Public Housing Authority resident and Multifamily Housing tenant satisfaction with their housing conditions.

- The Tenant Eligibility Assessment Subsystem (**TASS**) enables HUD to conduct nationwide computer matching of tenant-reported income data to Federal IRS tax information and the Social Security Administration.

- The Web Access Security Subsystem (**WASS**) provides a common framework for administering application-level security for HUD systems.

- The Voucher Management Subsystem (**VMS**) tracks housing choice vouchers.

- The Earned Income Verification Subsystem (**EIV**) matches tenant supplied income versus Social Security and National Directory of New Hires data.

- The Management and Planning System (**MAPS**) will be used to track workflow across PIH-IT systems.

- The Resource Allocation Subsystem (**RA**) manages formula and competitive grants for PIH.

- The Katrina Disaster Housing Assistance Program/Disaster Voucher Program Subsystem KDHAP/DVP) tracks vouchers for both Katrina and Rita.

The PIH Information Center developed a state of the art system to improve the submission of information to HUD. The PIH Information Center facilitates more timely and accurate exchanges of data between PHAs and Local HUD Offices and is compromised of all the PIH Systems above-mentioned. The PIH Information Center allows PHAs to electronically submit information to HUD. The first release of the PIH Information Center application was successfully implemented on December 15, 1999. The PIH Information Center introduced a flexible, scaleable, Internet-based approach that enables PHA users and HUD personnel to access a common database of PHA information via their web browser. Due to the success of this application, the PIH Information Center technical architecture was used as the foundation for many PIH systems essential to the Local HUD Office, Troubled Agency Recovery Center (TARC), and Housing Authority personnel.

The PIC systems, modules and Web applications currently in PIH's production environment include the following:

- Risk Assessment System

- Housing Authority (HA System)

- Public Housing Drug Elimination Program (PHDEP) System

- PHDEP Drug Elimination Reporting System

- PHA Development (Building/Unit Inventory) System

- Native Economic Development Guidance and Empowerment (EDGE) System

- Event Tracking System (ETS);

- Section 8 Management Assessment Program (SEMAP) System

- Form 50058 System; and

- Security/Database Administration System

Task performed under this task order cannot be done by the individual system maintenance contracts supporting the PIH systems outlined in Section C.2.

C.3   SCOPE

The work required in this TOR consists of the following main activities and requirements

- Project Management
- Planning
- Development
- Maintenance
- Configuration Management
- Documentation
- Reporting
- Training
- Meeting
- CMMI Implementation Support

With the exception of training, CIO Support (Task 5) shall include the work mentioned in the bullets above.

C.4   OBJECTIVE

The objective of this procurement is to award the Development Coordination Group (DCG) task order to support PIH-REAC's subsystems, CIO Office Systems Support (Task 5), and to expand service to all PIH systems. The selected contractor shall perform all activites in accordance with the subsystem maintenance and development for the Development Coordination Group in accordance with the PIH-REAC Configuration Management Plan, PIH-REAC Software Development Policy and the REAC Software Quality Control Test Procedures DCG services include:

a.   Change Management

b.   Configuration Management

c.   Database Administration

d.   Data Strategies

e.   Data Conversion

f.   Technical Architecture

g.   System Management

h.   Security Management

The primary services to be performed are planning, analysis, management support, systems development, system testing, system operation, system maintenance, and software technical support. The Contractor shall provide personnel, resources and support services identified for this task

In order to accomplish the objectives of this Task Order, the Contractor shall be required to verify that all products and services submitted to the DCG are in compliance with the

HUD SDM. In doing so, they shall be required to communicate issues, problems, concerns, etc, directly to the Government TPOC, listed in Section F.7 of this TOR. The Government shall be responsible for coordinating with the PIH System Contractors.

C.5   TASKS

The Contractor shall perform the following tasks:

- C.5.1   Current Environment and Overarching Considerations (CLIN 0001)
    - Subtask 1: Project Management
    - Subtask 2: Change Control Management
    - Subtask 3: Training
- C.5.2   Task 2: Operational Support (CLIN 0002a)
- C.5.3   Task 3: Corrective and Adaptive Maintenance (CLIN 0002b and 0002c)
- C.5.4   Task 4: Development (CLIN 0003)
- C.5.5   Task 5: CIO System Support (CLIN 0004)

C.5.1   TASK 1 – ENVIRONMENT AND OVERARCHING CONSIDERATIONS (CLIN 0001)

C.5.1.1   Systems Development Methodology (SDM)

The Contractor shall generate all necessary documents in accordance with the HUD System Development Methodology (SDM). The SDM and the related Quality Assurance Guidelines are located at the URL noted in Section J.6.

C.5.1.2   Section 508 Requirements

For the purposes of this task order, all upgrades, new functionality, and legacy code reviewed by the DCG Contractor by either default or result of emergent changes shall meet the applicable accessibility standards at 36 CFR 1194. 36 CFR 1194 implements Section 508 of the Rehabilitation Act of 1973, as amended, and is viewable at the address shown at J.9.

The DCG Contractor shall support the other systems maintenance and development Contractors when they deliver each product or service to ensure all are compliant with the following technical standards extracted from 36 CFR 1194.

☐   § 1194.21 Software applications and operating systems
☐   § 1194.22 Web-based intranet and Internet information and applications

☐   § 1194.23 Telecommunications products
☐   § 1194.24 Video and multimedia products
☐   § 1194.26 Desktop and portable computers
☐   § 1194.31 Functional Conformance Criteria

For all EIT products and/or services supported under this task order, the Contractor shall assist the Government with any necessary analysis and present to the Government in a Product Accessibility Report the potential accessibility challenges presented by the product and recommendations for solving them. These recommendations shall incorporate market research into the availability of Commercial-off-the-shelf (COTS) products that could be used to make these items accessible to persons with disabilities. Further, the proposed solution shall indicate where full details of compliance demonstration can be found (e.g., Contractor's web site or other exact location).

C.5.1.3   System Response Time Requirements

The DCG contractor shall work with the other PIH System Contractors to ensure System Response Time for all of the PIH Systems. The DCG provides this support, but the individual PIH System contractor is ultimately responsible for ensuring this requirement is met. HUD will be commencing a Quality Assurance (QA) pilot for about approximately 15 Development teams. The DCG Contractor shall assist the Government with this pilot. Specifically, this support is part of the development support listed in C.5.4.2.

To assist the PIH System contractors, the DCG Contractor, in some instances, performs quality assurance on the PIH System Contractor's code, or may even work with the PIH Systems contractor to write the code in tandem. The PIH Systems Contractors shall meet the performance requirements stated below by the HUD test center when conducting a performance test using WinRunner/LoadRunner (or a comparable test tool as prescribed by the HUD test center) with a simulated 200 simultaneous users and a full copy of production data.
     a.   3 seconds for page load
     b.   2 seconds for stored procedure

This is inclusive of all of the sub-elements of a page load - all queries and stored procedure calls, file processing, as well as startup, parsing and shutdown.

Any page running over 3 seconds must receive a waiver from the HUD IT Project Manger and the Development Coordination Group (DCG) to proceed beyond HUD IT testing into production. At certain times, the Contractor, with advanced notice from the Government, shall be available 24 X 7 for releases or for special long-running jobs; however, this is not a day-to-day requirement.

C.5.1.4   Use of Standard Tools

PIH-REAC contractors shall use PIH-REAC standard tools including as listed below:

Development   ECLIPSE (Java teams), Cold Fusion (Cold Fusion teams)
Requirements   Test Director
Testing   LoadRunner/Winrunner
Modeler   Rational Rose (if applicable)

JAVA or C++ code shall not be developed in such a way as to depend upon proprietary code libraries without direction from the GTM that such code libraries have become standard for PIH-REAC.

C.5.1.5   SUBTASK 1: PROJECT MANAGEMENT

The Contractor shall develop a Project Management Plan (PMP).   The PMP is in addition to those documents required by the Software Development Methodology (SDM).

C.5.1.5.1   Project Management Plan

The PMP is further described below (paras. C.5.1.5.1.1 thru C.5.1.5.1.4) and consists of four (4) parts:

- Project Plan

- Transition Plan

- Risk Management Plan

- Quality Assurance/Quality Control Plan

C.5.1.5.1.1   Project Plan

The Contractor shall develop a Project Plan that depicts a Work Breakdown Structure (WBS), segregating work packages into activities of 80 to 100 hours of effort. Each activity will result in a milestone associated with a particular deliverable.

The Project Plan shall include a narrative that:

a. Describes the planned schedule

b. Identifies each step of the work process required for completing the work

c. States the period of time needed to accomplish each step (expressed in calendar dates)

d. Describes the staffing resources allocated to each task

e. Provides the rationale for the project organization, staff utilization and other resources allocated to each task or activity

The Project Plan shall include a WBS that is broken down into work packages that:

a. Include a description of the work to be performed

b. Result in a specifically defined work product

c. Have a start and end date

d. List any dependencies on other work packages

e. Identify cost

f. Roll up into account codes

g. Account for Personnel Resources

The Contractor shall submit project plans that outline the high-level activities for all SDM development phases utilizing the HUD standard WBS defined in the SDM within "A" – "J" categories per initiative and align the initiative to funding source year of the effort. "A" – "J" sub-PCAS designations are:

A	=	Initiation / Planning
B	=	Requirements Definition
C	=	Systems Design
D1	=	System Security
D2	=	Software Acquisition
E	=	Hardware / Infrastructure
F	=	Development + Perfective Maintenance
G	=	System Integration / Testing
H	=	Installation and Deployment
I	=	System Operations
J1	=	Corrective Maintenance
J2	=	Adaptive Maintenance

HUD's Office of the Chief Information Officer (OCIO) will provide the Contractor with a template to define project plan structure. The Contractor shall maintain the following data for each WBS task.

Planned Start	Planned Finish	Baseline Cost	Actual Start	Actual Finish	Current Baseline	As Of Date	Incurred Cost	% Completed	Earned Value	Schedule Variance	Cost Variance

The work plan shall identify key personnel to include the Project Manager, the Lead(s) and Developers/Analysts. Prior to any work beginning, the HUD IT Project Manager, FEDSIM COR and Contractor Project Manager shall review the work plan and accept any changes prior to implementation of the work plan.

C.5.1.5.1.2   Transition Plan

The contractor shall develop a plan that details all required documentation, configuration, and procedures and it should include: General info (Purpose, Scope, DCG overview, and POCs), Personnel Transition (Methodology and schedule), IT Services Infrastructure Transition (methodology), Develop and maintenance activities (methodology),

Reengineering Opportunities (methodology), Institutionalization of Knowledge, and accessibility of Project Deliverables. Additional appendices could include 'DCG Training' recap, and/or DCG website screenshots. This Plan shall include the methodology for both transitioning in and out.

C.5.1.5.1.3   Risk Management Plan

The Contractor shall develop a risk management plan which:

a. Describes each individual risk to include the source of the risk and the trigger (or symptom) of the risk.

b. Determines the impact of the risk in terms of cost and schedule.

c. Documents procedures to manage the risk.

C.5.1.5.1.4   Quality Assurance/Control Plan

The Contractor shall develop a Quality Control Plan, which:

a. Identifies the standards that are applicable to this effort.

b. Includes procedures for complying with those standards.

c. Identifies techniques and metrics for measuring compliance.

d. Includes an approach for eliminating the causes of unsatisfactory performance.

C.5.1.5.2   Reporting

The Contractor shall submit to the Government the reports listed in C.5.1.5.2.1 thru C.5.1.5.2.4.

C.5.1.5.2.1   Status Reports

The Contractor shall submit to the Government the status reports listed in C.5.1.5.2.2 and 5.1.5.2.3.

C.5.1.5.2.2   Weekly Status Reports
The Contractor shall provide weekly status reports of outstanding issues to the HUD IT Project Manager.

C.5.1.5.2.3   Monthly Status Reports

The Contractor shall provide monthly progress/status reports. The status report shall show actual progress against the work plan in accordance with the detailed format included in the Monthly Status Report Format document, which is an attachment on the DCG website, see Section J). Major sections of the Monthly Status Report include:

a. Task Order Information

b. Development Cost

c. Deliverable Status

d. Changes to Personnel

e. Earned Value Analysis

f. Comments

C.5.1.5.2.4   Earned Value Management Criteria

The Contractor shall employ EVM in the management of this Task Order. While the Government reserves the right of final approval, a joint determination will be made by the Government and Contractor as to where EVM will be applicable. The Government anticipates that the Contractor will employ innovation in its proposed application of EVM techniques to this task order in accordance with best industry practices. EVM effectively integrates the project's technical scope of work with schedule and cost elements for optimum project planning and control. The qualities and operating characteristics of earned value management systems are described in American National Standards Institute (ANSI)/Electronic Industries Alliance (EIA) Standard-748-A-1998, *Earned Value Management Systems*. A copy of the standard is available from Global Engineering Documents (1-800-854-7179).

In the performance of this Task Order the Contractor shall use an earned value management system to manage the Task Order that:

> (1) Is recognized by the FEDSIM COR that complies with the guidelines in
ANSI/EIA Standard 748.

> (2) Provides on a monthly basis, or more often as deemed necessary by the
> FEDSIM
COR, the following project status information:

> > a. Budgeted (planned) cost of work scheduled (BCWS)

> > b. Budgeted cost of work performed (BCWP)

> > c. Actual Cost of Work performed (ACWP)

    d. Provide a cost curve graph plotting BCWS, BCWP, and ACWP on a monthly basis from inception of the Task Order through the last report, and plotting the ACWP curve to the estimated cost at completion (EAC) value

    e. Provide the following Earned Value Management variance analysis:

- Cost variance = (BCWP minus ACWP)
- Cost Variance % = (CV/BCWP X 100%)
- Cost Performance Index (CPI) = (BCWP/ACWP)
- Schedule Variance = (BCWP minus BCWS)
- Schedule Variance % = (SV/BCWS X 100%)
- Schedule Performance Index (SPI) = (BCWP/BCWS)
- Two independent Estimates at Completion (EAC)
- ACWPcum + 1/CPI X (BAC minus BCWP cum)
- ACWPcum + 1/CPI X SPI X (BAC minus BCWPcum)
- Variance at Completion (VAC) = (BAC minus EAC) for both EACs above
- Variance at Completion % + (VAC/BAC X 100%) for both EACs above
- Expected Funds to Completion (ETC)
- Expected Completion Date

    f. Explain the reasons for all variances

    g. Provide performance variance. Explain, based on work accomplished as of the date of the report, whether the performance goals will be achieved

    h. Provide the Contractor EAC and the differences with the two independent EAC calculated as above

    i. Discuss the corrective actions that will be taken to correct the variances, the risk associated with the actions, and how close these actions will bring the project to the original baseline. Define proposed baseline changes, if necessary.

    j. Leverages EVM techniques in managing the aspects of the task order to which they are most beneficial to the Government in accordance with best industry practices.

C.5.1.5.3   **Problem Notification Reports (PNR)**

The Contractor shall provide a Problem Notification Report (PNR) for any problem which may place in jeopardy either the technical performance, costs, or schedule, as presented in the PMP. A sample PNR is provided at Attachment C in Section J.

C.5.1.5.4   **Documentation Requirements**

The documentation requirements stated in HUD's Software Development Methodology (SDM) shall apply to all documents generated, developed, and updated under this SOW. The SDM and the related Quality Assurance Guidelines are located at the URL listed in Section J.

C.5.1.5.5   **Deliverable Management Module (DMM) entry**

The Contractor shall enter data into the Lotus Notes-based system to report and track deliverables entered into HUD's DMM. The DMM automatically attaches the date and time an entry is submitted.

C.5.1.5.6   **Meeting Requirements**

The Contractor shall:
- Prepare (i.e. create slides, schedule a time) and participate in a kickoff meeting with HUD and GSA FEDSIM.

- Attend Change Control Board (CCB) meetings – at least one representative should be present.

- Attend weekly infrastructure meetings with HUD CIO and meetings concerning enterprise architecture and security that impact DCG.

- Attend interface meetings with development and maintenance teams for related systems.

- Attend weekly program and system staff meetings with PIH business office representatives concerning the gathering, design, and implementation of business requirements.

- Prepare documents and code for PVCS and attend Change Control Board (CCB) meetings – at least one representative should be present.

- Attend ad-hoc meetings with development and maintenance teams for related systems including PIC ISD and REAC systems.

- All onsite meetings should include invitations and attendance by subsystem government Program Manager or PIH-REAC IT Manager or their representative.

- Prepare (i.e. create slides, schedule a time) and participate in monthly In-Progress Reviews with HUD and FEDSIM. At a minimum, the Contractor shall discuss the following at each IPR:
  - Task review and schedule/Action items past and future
  - Incurred (not billed) costs
  - Earned value reporting
  - Issues

- Summary

C.5.1.6   SUBTASK 2: CONFIGURATION MANAGEMENT REQUIREMENTS

The Contractor shall perform all activities in accordance with PIH-REAC's Configuration Management Plan attached on the DCG website. The plan addresses several topics including:

- Configuration management: Configuration management is a set of processes to identify configuration items, baseline configuration items and control changes to that configuration baseline. All changes must be evaluated and approved by the Change Control Board (CCB) in accordance with these procedures.

- Change management: Change management identifies and defines steps for initiating a Software Change Request (SCR) that may alter the existing Software Configuration Items (SCI). Change Requests (CR) and Problem Reports (PR) are the primary mechanisms to initiate a change to the existing requirements or report a problem occurring in the system.

- Release management: Release management consists of specific processes that manage the risks associated with each of the four PIH release categories: major releases, feature releases, defect releases and emergency releases. The processes address the coordination and responsibilities of all functional areas affected by the release to include the Project Manager, the Project Support Lead, the Development Coordination Group, Configuration Management, Network Administration, Database Administration, Security Administration, Web Administration and the Internet Services Group (ISG).

- Problem tracking: SCRs, CRs and PRs are submitted to the CCB for evaluation and approval. Upon CCB approval, the subsystem who submitted the SCR, CR or PR provides an assessment package for the appropriate release. The individual SCR, CR or PR is entered into the PVCS database for tracking while the correction becomes a part of a release, and as such is subject to release management procedures.

C.5.1.7   SUBTASK 3: TRAINING REQUIREMENTS

The DCG Contractor shall assist the Government by ensuring that all training developed for any of the PIH Systems discussed in this TOR complies with all applicable HUD standards, policy or guidance. In some instances, THE DCG Contractor may be required to develop training. The DCG Contractor shall ensure that all training approaches developed for the PIH System includes:

a. Identifying training methods, techniques and tools

b. Identifying training required for revised office procedures

c. Preparing a preliminary training schedule

d. Developing a syllabus

e. Preparing a training plan

Additionally, the DCG contractor will provide training as needed. Currently, there are upwards of 220 IT professionals at HUD who interact with DCG. Typical training consists of brown bags lunches, DCG intro kickoffs, special sit-down meetings and orientations with CM, Java, and our DBAs; the weekly CCB, etc.

The HUD SDM provides details regarding these activities. Training, conducted by the Contractor, shall include appropriate government personnel and users. The Contractor shall coordinate all training activities with the HUD IT Project Manager and the designated Program Training Contractor.

Depending upon the type and subject of training, the Contractor shall produce the appropriate documentation, such as, but not limited to user guides, procedures, data collection forms, program maintenance manuals, documentation material, training materials and Computer Based Training (CBT) in accordance with HUD standards.

C.5.2   TASK 2: OPERATIONAL SUPPORT/MAINTENANCE REQUIREMENTS (CLIN 0002a)

The DCG contractor shall support the system maintenance contractor in performing adaptive maintenance, corrective maintenance and operational support. The DCG contractor shall provide maintenance operational support to include:

- Analyzing production and on-line batch processes each day to determine/verify task completion status and to obtain metrics for space allocations and performance tuning

- Initiating steps for periodically archiving data.

- Coordinating and reviewing problems reported by the HUD IT Production Support staff, responding to user/help-desk inquiries, providing ad hoc reports and extracts regarding operational throughput, and providing background information regarding data characteristics. The PIH-REAC Technical Assistance Center (TAC) provides Level 1 support and resolves typical questions using their knowledge-based experience. The contractor shall provide Level 2 support when escalation is required to resolve technical issues. Ad hoc reports requests may originate from GAO reports, Inspector General findings, Freedom of Information Act (FOIA) requests, etc.

- Supporting change control and configuration management activity

- Providing technical support for escalated user inquiries/issues

- Preparing data extracts for ad hoc requests

- Providing training to new system users

C.5.3   TASK 3: CORRECTIVE AND ADAPTIVE MAINTENANCE REQUIREMENTS (CLIN 0002b and 0002c)

The DCG contractor shall provide both corrective and adaptive maintenance support to the PIH System Contractors.

C.5.3.1   Corrective Maintenance Requirements (CLIN 0002b)

For corrective maintenance, the DCG Contractor shall review the PIH system(s) and its associated documentation to fix problems caused by design, logic or coding errors. Additionally, the DCG Contractor shall perform software definition, design and build activities associated with the change and shall prepare or update test plans and test scenarios for user acceptance testing. Examples of corrective maintenance may include calculations that generate incorrect totals, data screens that omit a required entry or store an entry in the improper location, and abortive programs.

The DCG contractor shall provide the following corrective maintenance support to the PIH Systems Contractors:

- Maintain application to address reported problems and minor change requests

- Monitor application for system performance and errors; implement resolution/fixes as necessary

- Monitor system activity for production processes, and offer infrastructure alternatives, i.e., add additional server(s) during peak submission periods

- Troubleshoot DCG Tracker tickets

C.5.3.2   Adaptive Maintenance Requirements (CLIN 0002c)

For adaptive maintenance, the DCG Contractor shall modify the system(s) and its associated documentation to incorporate changes that are a result of new or changed laws, regulations, agency directives, OMB directives or audit findings. The DCG Contractor shall perform software definition, design and build activities associated with the change. The maintenance contractor shall also prepare or update test plans and test scenarios for user acceptance testing.

The DCG contractor shall provide the following corrective and adaptive maintenance support to the PIH Systems Contractors:

- Maintain application to address reported problems and minor change requests

- Monitor application for system performance and errors; implement resolution/fixes as necessary

- Monitor system activity for production processes, and offer infrastructure alternatives, i.e., add additional server(s) during peak submission periods

- Troubleshoot DCG Tracker tickets

C.5.4   TASK 4: DEVELOPMENT (CLIN 0003)

C.5.4.1   Planning Requirements

The DCG contractor shall support the PIH System development contractors in planning development activities. Planning requirements are stated in the HUD SDM and are in accordance with these project phases:

- Initiate Project: The Initiate Project phase of system development is the period in which an information management need is identified and the decision is made whether to commit the necessary resources to solve the deficiency.

- Define System: The Define System phase expands system objectives into specific, detailed functional and data requirements, which then form the basis for the detailed design of the system during the Design System phase. At the end of the Define System phase, a complete detailed description of the system functions is available to guide the design and subsequent activities of system development.

C.5.4.2   Development Requirements

The DCG contractor shall support and assist the PIH System development Contractors in performing development activities. Development requirements are stated in the HUD SDM in accordance with these phases (phase "a" and "b" are described in Section 4.2 above):

- Design System: The purpose of the Design System phase is to develop detailed specifications that emphasize the physical solution to the user's information management need as described in the Define System documentation. The detailed specifications are used in the Build System phase to create the system.

- Build System: The Build System phase of system development is the period in which developers take the detailed logical information provided in the Design System phase, transform it into machine-executable form, and ensure that all of the individual components of the system function correctly and interface properly with other components within the system.

- Evaluate System: The Evaluate System phase is the period in which independent testers measure the system's ability to perform the functions that are required by the user and ensure an acceptable level of performance. After this phase of development is completed, a clear indication of the system's readiness for operation is evident.

- Implement System: The purpose of the Implement System phase is to put into production the certified system. The system is initially at a pilot site and eventually released into its full-scale production environment during the Implement System phase. All necessary training for using the system is accomplished, and the system's performance is monitored in a production

environment.

The HUD SDM includes significantly more details regarding the development process.

The DCG contractor shall support the PIH Systems development Contractors in conducting the following reviews in support of the development process:

- Requirements Review (RR): The RR is conducted during the Define System phase to ascertain the adequacy of the developer's efforts in defining requirements.

- Design Review (DR): The DR is conducted during the Define System phase to evaluate optimization, correlation, completeness and risks associated with allocated technical requirements, and to include a summary review of the system engineering process that produced the allocated technical requirements and of the engineering planning for the next phase of effort.

- Specification Review (SR): The SR is conducted during the Design System phase to review the finalized Configuration Item (CI) requirements and operational concept. A successful SR shows that there is a satisfactory basis for proceeding into preliminary design.

- Preliminary Design Review (PDR): The PDR is conducted during the Design System phase to evaluate progress, consistency and technical adequacy of the selected top-level design and test approach, to evaluate the compatibility between requirements and preliminary design, and to assess the preliminary version of the operation and support documents.

- Critical Design Review (CDR): The CDR is conducted during the Design System phase to determine acceptability of the detailed design, performance and test characteristics of the design solution, and the adequacy of operation and support documents.

- Test Readiness Review (TRR): The TRR is conducted during the Build System phase to determine whether the test procedures are complete and to assure that the developer is prepared for formal CI testing.

- Formal Qualification Review (FQR): The FQR is conducted during the Build System phase to determine that a group of configuration items comprising the system are verified to have met specific program or project management performance requirements through tests, inspections or analytical processes.

- Production Readiness Review (PRR): The PRR is conducted during the Evaluate System phase to determine the status of completion of the specific actions that must be satisfactorily accomplished prior to executing a production decision to go forward.

Further information regarding these reviews can found in the HUD Quality Assurance Guidelines (QAG) which is accessible at the same website as the SDM listed in Section J of this TOR.

**C.5.5   TASK 5: CHIEF INFORMATION OFFICE SYSTEM SUPPORT –
Office of Systems Integration and Efficiency (OSI&E); Systems
Engineering Support Group (SESG) (CLIN 0004)**

The Contractor shall perform the following tasks for HUD information systems listed
below and all PIH systems in accordance with HUD Software Development
Methodology (SDM) documentation and deliverable requirements and the HUD Quality
Assurance Guideline (QAG) review requirements. A copy of the HUD Quality
Assurance Guideline (QAG) is located at the same website as SDM and the URL is
listed in Section J of this TOR.

The high-level OCIO, Systems Engineering and Support Group (SESG) support services
for this task include Database Management and Administration, Change, Configuration
and Release Management, Technical Architecture, and System Management.

The Contractor shall provide a separate monthly progress/status report for Task 5 that is
due no later than the 15th workday after the month ends. Major sections of the report
include contract information, development and maintenance cost breakouts, deliverable
status, changes to key personnel, earned value analysis (especially focusing on cost and
schedule variances and ratios), and special comments according to task 1 of this contract.

Additionally, the Contractor shall provide an initial Transition plan, and monthly Risk
Management and Quality Control Plans 15 working days after the award according to
task 1 of this contract.

The systems covered under Task C.5.5 include, but are not limited to, the following:

- Single Family Integration System (SFI)
- Grant Information Management System (GIMS)
- Community Development and Planning (CPD) Integrated Disbursement and
  Information System (IDIS)
- Economic Development System (EDSYS)
- Special Needs Assistance Programs (SNAP)
- Tile V
- Title VIII Automated Paperless Office Tracking System (APOTS)

C.5.5.1   Database Administration

In order to support the goal of an enterprise data model, with shared information across
the enterprise, SESG will centralize data modeling using standard tools such as ErWin.
SESG will implement policies and procedures to manage the multiple data models across
the enterprise. Changes to the data models as a result of approved decisions from the
CCB will be recorded, tracked and disseminated to all project teams.

SESG will ensure that all database changes will be implemented in compliance with the integrated release schedule. In order to allow other project teams time to assess impacts and incorporate any required changes, the integrated release schedule will include integrated data modeling sessions, database change request and database design lock milestones.

To ensure project teams are developing and testing against an environment that reflects the "to be" production environment, SESG will document and create the development and testing databases using repeatable processes.

In order to optimize the response time of HUD's applications both for the business users and external customers, SESG will provide tools to monitor the production databases for both performance and issues. In addition as part of the SESG process improvement initiative, SESG will work with the project teams to ensure quality-coding practices are implemented for all database activities.

The Contractor shall support database administration and capacity planning tasks including analyzing database efficiency and proposed improvements ensuring compliance with standards and procedures. Specific database administration activities include:
- Manage data models
- Document database interfaces
- Manage test databases
- Perform database migration
- Perform third party reviews
- Manage database consolidation

C.5.5.2   Data Strategies and Data Conversion Support

As the Federal Government migrates from traditional stove-pipe systems to shared information both internally within agencies and externally across agencies, HUD needs data standards that will support theses new requirements. In addition, data standards are required to support the increasing need for the protection of this information.

Traditionally the perception has been that data is owned at the project team level rather than at the enterprise level. This has led to HUD maintaining inconsistent, conflicting and duplicate data across the multiple projects. Currently data sharing is a challenge for the projects; it requires extensive research to find the correct data and frequently a conversion has to occur before that data can be shared.

Initially SESG would implement policies and procedures to facilitate the integration and standardization of data across the project teams. The long-term goal would be to move to an enterprise data model with institutionalized standards for sharing of information across the enterprise.

SESG recognizes that certain information is sensitive or covered by the Privacy Act. SESG will implement policies and procedures to ensure that data sharing would be the norm, but within the framework of data security.

The Contractor shall plan, analyze, design, develop and/or maintain strategies for Data Management, Data Warehousing, Data Mart, Data Mining and general reporting. Development support will include design and construction of databases using various relational data base languages, design of data loading procedures conforming to the operational environment and reporting requirements.

The Contractor shall provide data conversion support including, but not limited to, data clean-up/purification to ready legacy data to be converted to PIH IT subsystems, system set-up to establish that all-necessary reference data has been entered, and reconciliation of converted data.

C.5.5.3   Change, Configuration, and Release Management

C.5.5.3.1   Change Control Board

The contractor shall assist the Government in managing the change control process by enforcing the CCB (Change Control Board) charter while conducting CCB meetings -- activities include formalizing agendas and both documenting and distributing meeting minutes. Required support also includes hosting release design reviews, tracking system problem and change requests, and maintaining all necessary change management documentation.

C.5.5.3.2   Configuration Management

The SESG will implement policies and procedures to ensure that the integrity of baselines is assured. Changes to those baselines will only be made following the approval and authorization of the CCB.

The SESG will provide accurate status and current configuration data to project teams and business users. This information will facilitate causal analysis and resolution, a higher level CMMI process area.

The fact that the project teams within HUD are at different maturity levels. To facilitate continuous process improvement and to help all project teams to increase their maturity, the SESG will institutionalize policies and processes. SESG will work with the project teams to tailor these processes to their individual project requirements.

The Contractor shall provide configuration management support services that ensure that all items are properly versioned and tracked. Configuration Management services shall be delivered in accordance with HUD's Configuration Management Plan and include working with teams via the Polytron Version Control System – PVCS -- tracker and Version manager; determining components needed to build and subsequently building the test environments; enforcing HUD's release deliverables – assessment packages, installation and conversion plan and requirement trace ability matrices -- RTM; providing and maintaining code and directory structures in PVCS; enforcing team installation and deployment packages; and performing independent code builds between test cycles.

C.5.5.3.3   Release Management

OCIO needs to establish a process for handling scheduled releases and a well-publicized schedule well in advance (at least 12 months). Modifications to the release schedule are discussed and approved/denied by the change control board(s).

In addition to these scheduled releases, SESG will processes unscheduled and emergency releases on a weekly or as needed basis. All of these releases, scheduled or unscheduled, are managed using PVCS. The tool ensures that all code, documentation, and other software-related information is properly managed and tracked.

The SESG coordinates closely with production support teams prior to and during each release. For scheduled releases, detailed release schedules are developed and communicated to all parties involved in advance to ensure that sufficient planning occurs. Notification of unscheduled and emergency releases are provided as far in advance as possible and the appropriate authorizations are always acquired. The Configuration management/release processes used at PIH-REAC, which are validated by the HUD OIG can be modified and extended to the HUD enterprise through SESG support of OCIO.

The contractor shall participate in the performance of scheduled, unscheduled, patch and emergency releases; and manage development, system and integration testing, plus provide and monitor a production fix environment. Additional services also require interaction with HUD's Test Center, and HUD's infrastructure operations support teams to put software releases into Production.

C.5.5.3.4   Systems Testing

Testing is critical for ensuring application functionality and data integrity. For each software release, either scheduled or unscheduled, the SESG will work with the software development teams to prepare for and conduct adequate testing. This includes defining the process, and establishing standards that the development teams must follow.

The SESG will manage the test schedule for each scheduled release. The team will review test scripts, coordinate test plans, and consolidate test results from each team. An automated testing pilot is in progress and will be used to facilitate automated testing and performance testing using the WinRunner software tool. Once the Test Center receives the software modifications for testing, SESG will work with them to ensure that the appropriate code is pulled and promoted via PVCS and addresses any issues found during testing.

Although SESG activities are planned to the extent possible, there are opportunities to support HUD offices that are conducted on an ad hoc basis.

C.5.5.4   Technical Architecture Support and System Management Support

The SESG contractor shall monitor enterprise architecture standards provided by HUD to validate compliance with the HUD Enterprise Architecture.

The contractor shall:
- Coordinate across integrated enterprise-wide HUD architecture, and HUD's infrastructure operations support teams
- Plan and implement server migration
- Generate, analyze and distribute Webgain metrics
- Implement an application server environment
- Evaluate COTS upgrades

C.5.5.5   Quality Assurance

Process and Product Quality Assurance is a CMMI process area that allows HUD to objectively evaluate the applications and to communicate and ensure resolution of noncompliance issues.

At an organizational level, HUD has implemented standards for project development. SESG will review these standards and work with HUD management and project teams to ensure that they are relevant, complete and up to date. SESG will include as part of the software development life cycle, quality assurance milestone reviews in the release management plan. To ensure the objectivity of the quality assurance process, SESG will implement software tools to facilitate the reviews.

In order to support the causal analysis and resolution process, SESG will monitor application performance, evaluate recurring errors, and report relevant system metrics throughout the lifecycle.

SESG will also address the quality assurance of the processes and policies that support the software lifecycle.

The role of SESG in quality assurance will not be just that of an enforcer leaving the projects teams with little or no input. Both SESG and the project teams must play an equal part and take equal responsibility for quality assurance. In order to provide a better understanding of the critical importance of quality assurance, SESG will communicate and train all project teams on how to incorporate quality assurance into the software lifecycle.

C.5.5.6   CMMI Implementation Support

The Contractor shall support PIH IT in all aspects of its ongoing CMMI (Capability Maturity Model Integrated) implementation effort. This support may include, but is not limited to:

- Advising PIH IT regarding CMMI;
- Conducting CMMI related meetings and activities;
- Writing CMMI related documentation;
- Collecting artifacts;
- Conducting Standard CMMI Appraisal Method for Process Improvements (SCAMPI) assessments; and,

- Providing SEI (Software Engineering Institute) training.

C.5.5.7 Security Risk Assessment and Management:

Security measures are vital to protecting HUD's investment in its data and applications. The SESG has been working to establish well defined database security aligned with development activities to ensure that application business rules are working properly and system integrity is not compromised. A least level access model will be adopted and automated tools will be developed to define and maintain requirements for database-level security to be used by the business applications. SESG also addresses security from a systems configuration point of view. Several configuration changes including access control list (ACL) changes and relocation of servers to more secure internal networks will be adopted.

The contractor shall perform security risk assessment and management functions to include:
- Assess security risks
- Identify threats
- Identify vulnerabilities
- Determine risk mitigation strategies